continuous casting

The Challenges

Keep this massive mechanical process running non-stop. Your management and your customers are demanding more efficient production and closer near-net-shaped product. To get the job done, you are always working on the edge — dealing with ultra-high temperatures, extreme moisture saturation, and dangerous breakout conditions. You need real-time, accurate and dependable position information you can use to keep the process running.

Smart Solutions

All AMETEK Automation and Process Technologies mill-duty smart solutions are application driven. Whether we use standard products or special engineered solutions, you can depend on five things: accuracy and repeatability, survivability, easy installation, and service. Here are a few examples in continuous casting:

1 Ladle Crane Position and Control
- Resolver-based long travel position sensors
- Resolver-based bridge and trolley position sensors
- Brakes
- CATRAC™

2 Ladle Turret Position
- Mill-duty rotating cam limit switches position turret
- Resolver-based encoders and programmable limit switches
- Ladle lift – programmable limited switch systems (PLS) Models 1989, 2500 and 1995; Resolvers Models 925 and 1986

3 Ladle Slide Gate Control
- Linear Displacement Transducers (LDTs) in air-cooled, mill-duty housings

4 Tundish Car Position and Control
- Linear cable reel sensor monitors horizontal position
- Linear Displacement Transducers (LDTs) in mill-duty housings monitor height
- CATRACs™
- Electro-thrust brakes

5 Mold Width Monitoring and Control
- Portable mold width calibration device provides digital indication of width dimension accurate to 0.002" (0.05 mm)
- Resolver-based width measurement encoder packages
- Linear Displacement Transducers (LDTs) for narrow face position measurement
- Water cooled, mill-duty Linear Displacement Transducer (LDT) monitors lateral strand guide position
- Geared rotary limit switches

6 Spray Chamber Drive Roll Velocity (Cast Speed)
- Oil filled (to prevent water penetration) resolver-based encoder packages with remote electronic encoder module

7 Torch Cutoff Machine Position and Control
- 925 Cable Reel and resolver-based cutoff position sensors
- Mill-duty resolver-based torch traverse position and velocity sensors
- Resolver-based machine travel encoders measure slab length
- Air-cooled, Linear Displacement Transducers (LDTs) mounted on cutoff machine clamp mechanism give width measurements.
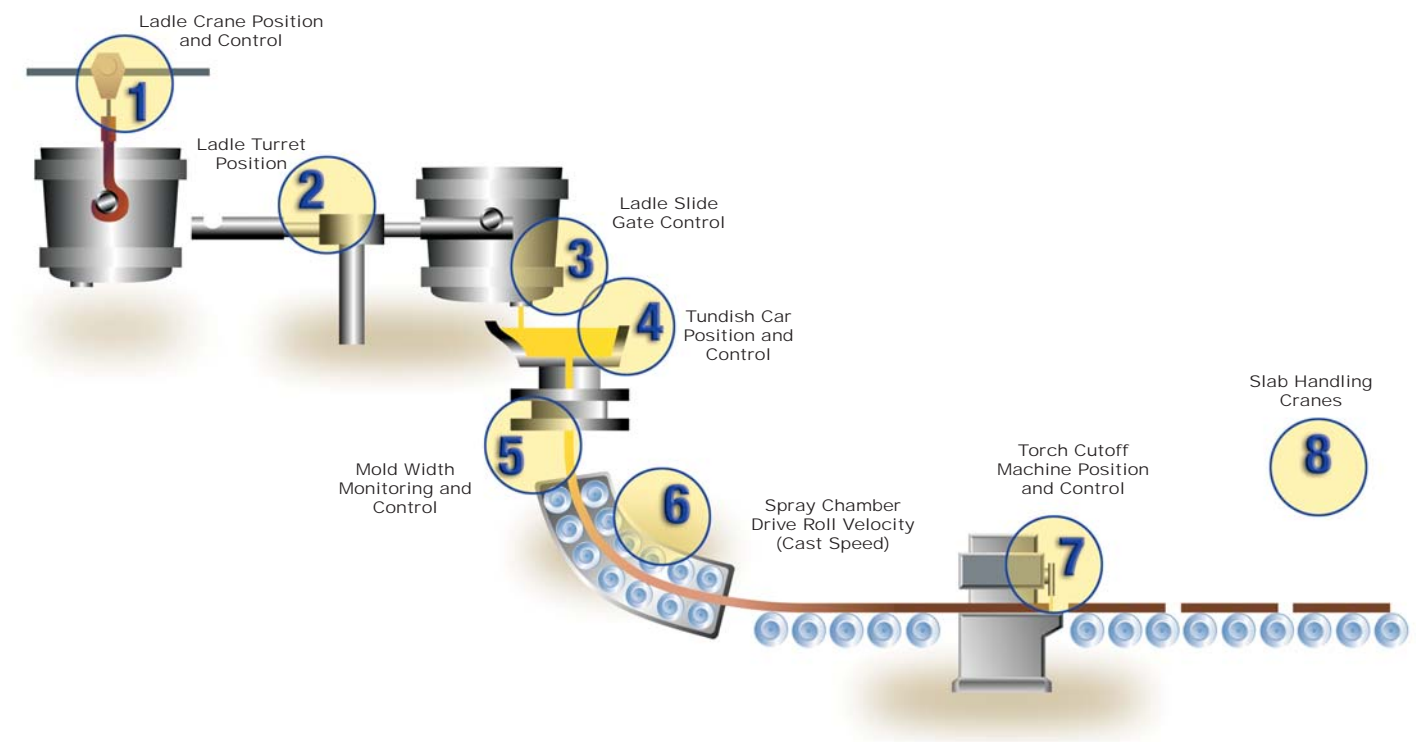
8 Slab Handling Cranes
- Brakes
- CATRAC™
- Cable Reels
- Cam limit switches
- Resolvers
- 2120
- 2500

More Mill-Duty Solutions

Control Products

In this area of the mill, AMETEK Automation and Process Technologies offers mill-duty GEMCO hydraulic, electric, and electro-thrust brake systems, CATRAC™ cable and hose carriers, LDTs, resolvers, interface modules and B/W point level control of cooling water systems.

Ladle Crane Position and Control — 1
Ladle Turret Position — 2
Ladle Slide Gate Control — 3
Tundish Car Position and Control — 4
Mold Width Monitoring and Control — 5
Spray Chamber Drive Roll Velocity (Cast Speed) — 6
Torch Cutoff Machine Position and Control — 7
Slab Handling Cranes — 8

application notes

Closer Tolerances / Reduced Scrap
Significant Material Savings and Closer Near-Net-Shaped Product with Our Torch Cut-Off Monitoring System

The Challenge: To take control of the torch cut-off machine operation, reduce waste, and produce closer near net shaped slab lengths

Generally, control, accuracy, and repeatability has been so poor in this important operation that additional slab length is programmed into the operation to ensure that the slabs produced are at least to customer specifications. The waste is significant. We have a better idea.

The Solution: We have air-cooled resolver or Linear Displacement Transducer (LDT) systems to take control of your torch cut-off operation

In all cases, our systems can re-confirm the width of the slab as it enters the torch cut-off area and provide accurate slab length control by monitoring cut-off machine position and movement. In addition, our systems control torch start, stop, and rate of cut. The results are closer near net-shaped slabs and significant material savings.

Consult factory for application details.

This is a good example of our ability to give you what you need, not necessarily what we have to sell.

GEMCO® · CATRAC™ · B/W Controls™ LIQUID LEVEL TECHNOLOGY